

**Listed Waterbody:** **Schwan Lake**

**Listed Condition:** **Pathogens**



**Designated Beneficial Uses<sup>1</sup>:** REC-1, REC-2, WILD, WARM, MIGR, SPWN, BIOL, RARE, SHELL, and COMM

**Watershed Location:** Santa Cruz County, City of Santa Cruz, tide gates prevent drainage to ocean

**Year added to California's CWA Section 303(d) List of Impaired Waters - 1994**

**Preliminary Schedule for Schwan Lake – Pathogen Impairment Investigation project**

Task	Completion Date	Notes
Project Plan	December 2003	
Data Collection and Analysis	PrgrsReport-June2005 Final- October 2005	Active *contact staff to submit data
Preliminary Project Report: draft TMDL Numeric Targets & Source Analysis	March 2006	
Project Report	July 2006	
Regulatory Action	June 2007	

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**Basis for Listing:** No written record of the basis for this 1994 listing has been located. The exact data and/or reports used to list this waterbody are unknown, however, data taken by the County of Santa Cruz from 1986 to 1994 do show exceedences of the Basin Plan's bacterial water quality objective for contact recreation (see Figure 1).

**Background:**

As shown on Figure 1, the most current available information indicates fecal coliform levels in Schwan Lake are exceeding numeric water quality objectives applicable to the beneficial uses designated for the lake. The shellfish harvesting beneficial use (SHELL) requires the most stringent water quality objective, which is:

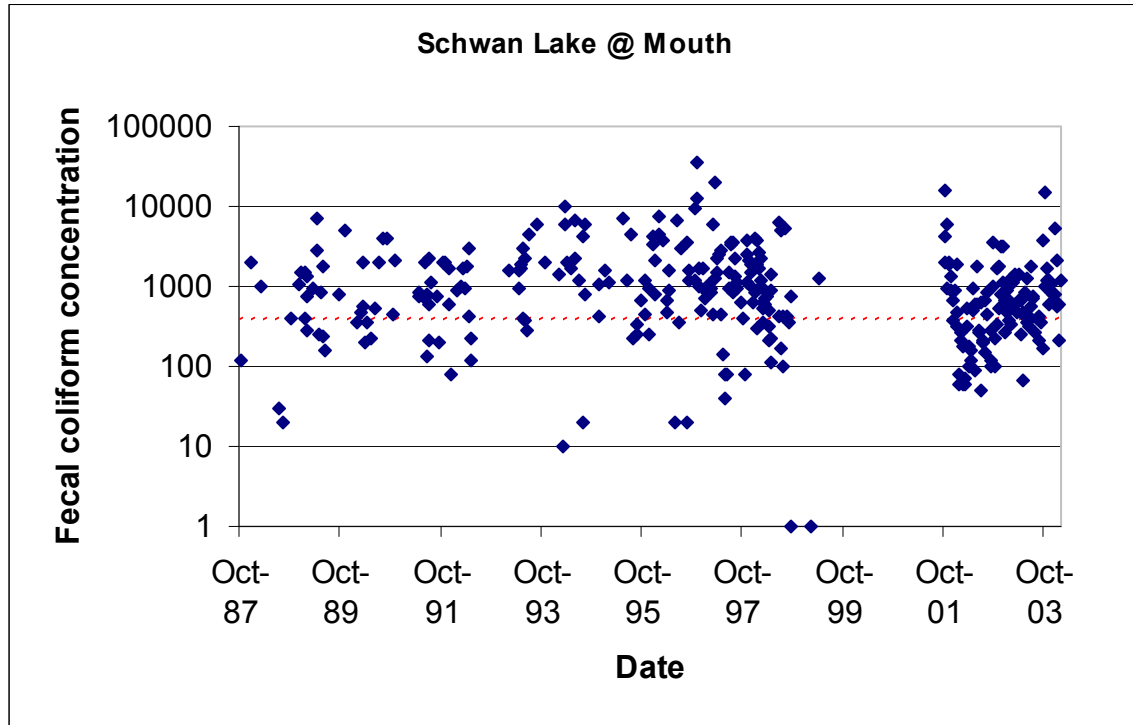
“At all areas where shellfish may be harvested for human consumption, the median total coliform concentration throughout the water column for any 30-day period shall not exceed 70/100 ml, nor shall more than ten percent of the samples collected during any 30-day period exceed 230/100 ml for a five-tube decimal dilution test or 330/100 ml when a three-tube decimal dilution test is used.”

The Basin Plan also contains a fecal coliform objective water-contact recreation (REC-1). If investigation determines the SHELL beneficial use does not actually exist in Schwan Lake, then the REC-1 objective for fecal coliform would be the most stringent objective applicable to Schwan Lake. The fecal coliform objective for REC-1 is:

<sup>1</sup> REC-1 and REC-2 = Contact and Non-contact Recreation; WILD= Wildlife Habitat; WARM=Warm Freshwater Habitat; MIGR=Migration of Aquatic Organisms; SPWN= Spawning, Reproduction, and/or Early Development; BIOL= Preservation of Biological Habitats of Special Significance; RARE=Rare, Threatened, or Endangered Species; SHELL= Shellfish Harvesting, and COMM=Commercial and Sport Fishing

“Fecal coliform concentration, based on a minimum of not less than five samples for any 30-day period, shall not exceed a log mean of 200/100 ml, nor shall more than ten percent of total samples during any 30-day period exceed 400/100 ml.”

Figure 1. Available data from 1987- 2004.



Preliminary Source Evaluation:

Because local homes around Schwan Lake are connected to the city's sanitary sewer, the main current source of fecal coliform to the Lake is anticipated to be birds or other wildlife. There is a possibility of some human sources, such as sewer leaks and nonpoint source runoff contributing to the pathogen impairment. Further analysis of all potential sources will need to be considered during this project.

Appropriate Beneficial Use :

The most stringent numeric objectives for fecal coliform in Schwan Lake are those designed to protect the beneficial use of shellfish harvesting. However, Santa Cruz County staff indicate shellfish harvesting has never occurred within the estuary. Regional Board staff will evaluate the appropriateness of the shellfish harvesting beneficial use designation for Schwan Lake as part of this Impaired Waters Project. A Use Attainability Analysis may be prepared if it is determined that the shellfish harvesting use has not existed or the water quality objective to support this use does not appear to have been achieved since November of 1975 (the date when anti-degradation requirements were established in California water law). The tasks described below include steps which would be followed to alter the designated beneficial use, although those steps may or may not be needed.

**Phase 3. Data Collection: Data Collection and Analysis**

Who	Regional Board (RB) staff – D. Gouzie Stakeholders – County collaborate on design and performance of monitoring
Action Steps & Schedule	<ul style="list-style-type: none"> <li>July 2004- August 2004: Develop Monitoring Plan to characterize problems and sources. The RB will request the County to perform the Monitoring Plan.</li> <li>September 2004- June 2005: Oversee implementation of Monitoring Plan and submittal of results, prepare Progress Report of monitoring.</li> <li>July - August 2005: Oversee remainder of Monitoring Plan and submittal of results.</li> <li>September 2005- October 2005: prepare Data Collection and Analysis Report including Revised Problem Statement. This report will present data collected from the last five years of Regional Board/County files and CCAMP.</li> </ul>
Cost (PY & \$)	<u>Staff Resources:</u> for FY 2004-05: 0.2 PY and for FY 2005-06: 0.1 PY <u>Contract Resources:</u> <u>Other:</u> None
Issues	<p>Staff is relying on the assumption that the shellfish harvest beneficial use has never been attained, such that setting targets for protection of REC-1 beneficial use will be adequate. If the assumption is incorrect, a TMDL will need to be developed based on protection of shellfish harvesting. This may result in extending the time frame needed to develop an adequate implementation plan.</p> <p>Staff is also relying on the County to conduct monitoring: if the county does not have the resources to initiate monitoring consistent with this schedule, the timeframe may need to be extended.</p>

**Phase 4. Project Analysis: Use Attainability Analysis and Draft TMDL Report**

Who	Regional Board staff – D. Gouzie Stakeholders - Provide Technical Advice
Action Steps & Schedule	<ul style="list-style-type: none"> <li>Use Attainability Analysis               <ul style="list-style-type: none"> <li>September 2004-January 2005: collect data &amp; info on actual historic occurrence of shellfish harvesting, and evaluate historical water quality (since November 28, 1975, if available) to determine if water quality necessary to support shellfish harvesting has been achieved</li> <li>January 2005 - March 2005: Prepare draft Use Attainability Analysis report as appropriate</li> <li>July 2005 - October 2005: If appropriate, Propose De-Designation of SHELL use to Regional Board</li> </ul> </li> <li>September 2005-October 2005: Perform source analysis relating locations of target exceedences (including new data collected in FY 04-05) to determine probable pathogen sources causing exceedences; complete Source Analysis which may include GIS analysis of land uses in watershed</li> <li>November 2005 – December 2005: Summarize Numeric Targets and describe Source Analysis</li> <li>January 2006 - March 2006: Prepare Draft Project Report with TMDL and allocations.</li> </ul>
Cost (PY & \$)	<u>Staff Resources:</u> for FY 2004-05= 0.2 PY (for UAA Analysis) and for FY 2005-06: 0.2 PY <u>Contract Resources:</u> = None <u>Other:</u> None
Issues	RB staff anticipate using Basin Plan Fecal Coliform Objectives as the numeric target, changes to these objectives may impact the project schedule.

**Phase 5. Regulatory Action Selection: Prepare Project Report(s)**

Who	Regional Board staff – D. Gouzie Stakeholders: Stakeholders will review Project Report to provide comments
Action Steps & Schedule	<ul style="list-style-type: none"> <li>March 2006 – April 2006: prepare draft Project Report with analysis of implementation options and recommending preferred option.</li> <li>May 2006: Send to stakeholders for review and comment</li> <li>June - July 2006: Consider stakeholder comments and revise report if appropriate. Prepare final Project Report describing proposed Regulatory Action; Prepare other documents necessary for proposed regulatory action (e.g. may include resolution, CEQA documents, etc)</li> </ul>
Cost (PY & \$)	<u>Staff Resources:</u> for FY 2005-06: 0.2 PY
Issues	Not at this time

**Phase 6. Regulatory Process: Regulatory Action(s)**

Who	Regional Board staff – D. Gouzie Stakeholders: review Preliminary Project Report, comment as appropriate
Action Steps & Schedule	<ul style="list-style-type: none"> <li>August 2006 – December 2006: Obtain appropriate reviews (e.g., scientific, legal or public comment reviews as appropriate to proposed regulatory action), respond to comments as appropriate, and schedule for Regional Board approval</li> <li>January - June 2007: propose Regulatory Action to Regional Board</li> </ul>
Cost (PY & \$)	<u>Staff Resources:</u> for FY 2006-7: 0.2 PY <u>Contract Resources:</u> = no RB3 contract money estimated at this time
Issues	None at this time.

**Potential Future Activities (as needed)**

Some DNA analysis may be necessary to refine sources.

**Budget and Schedule Uncertainties:**

*Budget:*

*Schedule:*